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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,437	09/30/2003	Sivakumar Muthuswamy	CM05325LL	5626

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EXAMINER

LE, HUYEN D

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/675,437

Applicant(s)

MUTHUSWAMY ET AL.

Examiner

HUYEN D. LE

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 11-15 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/30/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10, drawn to a microphone system that comprises a switch for switching a microphone between directional mode and omni directional mode, classified in class 381, subclass 356.
  - II. Claims 11-15, drawn to a communication device that has a selectable directional port for automatically enabling during a speakerphone mode or a close-talking mode, classified in class 455, subclass 350.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions Group I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination in Group II has separate utility such as a controller for automatically enabling the selectable direction port based on the communication device in a speakerphone mode or close-talking mode. See MPEP § 806.05(d).
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Barbara Dautre on May 26 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-15 have

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been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### *Drawings*

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: the references 114 and 314 are not mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

7. The disclosure is objected to because of the following informalities: page 4, line 4, after “diaphragm”, “108” should be changed --114--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Killion (U.S. patent 3,835,263).

Regarding claims 1-3 and 10, Killion teaches a microphone system (35, 65, 75, 77, figures 5, 6, 7) that comprises a microphone (75). The microphone (75) has a front volume (47,

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87 and the volume at the front of the diaphragm 86), and a rear volume portion (49, 89, 92).

Killion further shows a first audio port (41, 79, 83) accessing the front volume, a second audio port (43, 55, 81, 85) accessing the rear volume, and a switch (39, 69, 84) as claimed.

Killion does not specifically teach that the microphone (35, 65, 75) is a MEMS microphone. However, Killion does not restrict any specific type for the microphone (35, 65, 75) and providing a MEMS microphone in a communications device is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any type of a microphone in the Killion microphone assembly such as a MEMS microphone with a MEMS switch for better applying and fitting a small transducer in a communications device.

Regarding claim 4, Killion teaches the switch that automatically switches the microphone between a directional mode and omni-directional mode (col. 1, lines 29-36 and col. 7, lines 39-43).

Regarding claim 5, Killion teaches the second and third audio ports (43, 55, 81, 85) that are of different path lengths relative to the diaphragm.

Regarding claims 6 and 8, Killion teaches the second audio port that has an acoustic flow resistive material as claimed (col. 5, lines 34-37 and col. 7, lines 28-30).

Regarding claim 7, Killion teaches the second and third audio ports that have different acoustic flow resistive materials as claimed (col. 5, lines 34-37 and col. 7, lines 28-48).

Regarding claim 9, Killion teaches the acoustic flow resistive material that is coupled to the second audio port as claimed (col. 5, lines 34-37 and col. 7, lines 28-30).

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10. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berland (U.S. patent 4,142,072).

Regarding claims 1-3 and 10, Berland teaches a microphone system (figures 1, 2, 5) that comprises a microphone (7, 8). The microphone (7, 8) has a front volume and a rear volume portion (see the front and back volumes in figures 1, 2, 5). Berland further shows a first audio port (2, 4, 13) accessing the front volume, a second audio port (3, 10) accessing the rear volume, and a switch (1) as claimed.

Berland does not specifically teach that the microphone (7) is a MEMS microphone. However, Killian does not restrict any specific type for the microphone and providing a MEMS microphone in a communications device is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any type of a microphone in the Berland microphone assembly such as a MEMS microphone with a MEMS switch for better applying and fitting a small transducer in a communications device.

Regarding claim 4, Berland teaches the switch that automatically switches the microphone between a directional mode and omni-directional mode (figures 1, 2).

Regarding claim 5, Berland teaches the second and third audio ports (3, 5, 10) that are of different path lengths relative to the diaphragm.

Regarding claims 6-9, Berland does not specifically teach an acoustic flow resistive material that is coupled to the second and third audio ports as claimed. However, the examiner takes the Office Notice that providing the acoustical impedance means or acoustic flow resistive material for a phase shift or delay to the sound waves is known in the art.

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Therefore, it would have been obvious to one skilled in the art to provide an acoustic flow resistive material that is coupled to the second and/or third audio ports accessing the rear volume portion of the microphone for better controlling the sound waves in the microphone assembly.

### *Conclusion*

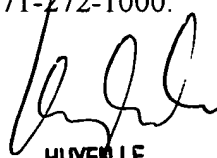
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL  
May 26, 2006



HUYEN LE  
PRIMARY EXAMINER